Benchmark Cost Proxy Model
Release 3.1

Loop Inputs Documentation

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Preface

The intent of this document is to discuss the input definitions, default values, sources and rationale for the individual loop module inputs for BCPM 3.1. Public information is used wherever available to populate the default values. Certain of the input values are tied to the USDA, Soil Conservation Service STAATSGO terrain database also used as model inputs. Default inputs relating to component pricing are an average of the many Local Exchange Carriers (LECs) that participated in the surveys conducted for version 1.1.

A more general discussion of the inputs for the switching module of BCPM 3.1 can be found in the BCPM 3.1 Model Methodology.

LOOP MODEL INPUTS
Contents

1. Loop Cost Inputs

These tables are to be populated with inputs that depict loop costs for the jurisdiction or company for which the model is being run. The default input values supplied with BCPM 3.1 are national averages that were developed for FCC use for USF purposes represent what the model sponsors consider to be reasonable and representative values for these inputs. The defaults are provided for the convenience of users who may not have access to more specific company, state, or regional data. Many of the engineering inputs are taken from industry standard procedural practices including the Lucent Technologies Outside Plant Engineering Manual. Some are based upon observations and the judgment of LEC outside plant engineering teams from many of the LECs across the country. The BCPM Sponsors believe the default values are appropriate national averages but are not necessarily valid for each individual serving area. Inputs should be reviewed by the user to determine if modifications are necessary to match the inputs to the geographical area being run in the current model scenario. Many of the inputs have a wide range of valid values depending on the cost characteristics of the state or LEC being modeled. We recommend that the user replace these values with state and company specific inputs whenever available.

1.1 24 Gauge Aerial Copper

1.1.1 Definition

The type of cable related to these inputs is a single sheath (BKTA/BKMA) when available, otherwise, DucPic cables are used. Cable sizes in this table range from 12 to 4200 pair. Values are in cost per foot.

1.1.2 Typical Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field. However, the sum of all fields populated should represent total installed cost.

The Model algorithms, in the Loop.xls module, price out the various pieces of the OSP facilities using these cable costs. Should companies not use some of the smallest or largest cable sizes, the input values should be populated with the cost of the smallest or largest actually used.

There are nine density zones designed in BCPM. The model sponsors were asked to make inputs available for each of the density groups. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. Density adjustments are made by placing a dollar cost (increase or decrease) that is specific to the company's different cable cost in the given density column, if applicable.

Note: Messenger installed cost is now a separate cost input located under the STRAND inputs.

1.1.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the combined LEC engineering team subject matter experts.

1.1.4 Rationale

These inputs allow the user to input their company specific copper cable cost data by cable size and density.

1.2 24 Gauge Buried Copper

1.2.1 Definition

The type of cable used here is armored Dual Sheath "filled" cable to minimize damage due to water, dig-ups and animals. Cable sizes in this table range from 12 to 4200 pair. Values are in cost per foot.

1.2.2 Typical Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field. However, the sum of all fields populated should represent total installed cost. The Model algorithms, in the Loop.xls module, price out the various pieces of the OSP facilities using these cable costs. Should companies not use some of the smallest or largest cable sizes, the input values should be populated with the cost of the smallest or largest actually used.

There are nine density zones designed in BCPM. The model sponsors were asked to make inputs available for each of the density groups. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. Density adjustments are made by placing a dollar cost (increase or decrease) that is specific to the company's different cable cost in the given density column, if applicable.

1.2.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the combined LEC engineering team subject matter experts.

1.2.4 Rationale

These inputs allow the user to enter their company specific copper cable cost data by cable size and density.

1.3 24 Gauge UG Copper

1.3.1 Definition

The type of cable used for these default inputs is DucPic to avoid pressurization expenses. Cable sizes in this table range from 12 to 4200 pair. Values are in cost per foot.

1.3.2 Typical Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field, as desired. However, the sum of all fields populated should represent total installed cost. The Model algorithms, in the Loop.xls module, price out the various pieces of the OSP facilities using these cable costs. Should companies not use some of the smallest or largest cable sizes, the input values should be populated with the cost of the smallest or largest actually used.

There are nine density zones designed in BCPM. The model sponsors were asked to make inputs available for each of the density groups. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. Density adjustments are made by placing a dollar cost (increase or decrease) that is specific to the company's different cable cost in a given density column, if applicable.

1.3.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the combined LEC engineering team subject matter experts.

1.3.4 Rationale

These inputs allow the user to input their company specific copper cable cost data by cable size and density.

1.4 26 Gauge Aerial Copper

1.4.1 Definition

The type of cable used for default inputs is a single sheath (BKTA/BKMA) when available, otherwise, DucPic cables are used. Cable sizes in this table range from 12 to 4200 pair. Values are in cost per foot.

1.4.2 Typical Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field. However, the sum of all fields populated should represent total installed cost. The Model algorithms, in the Loop.xls module, price out the various pieces of the OSP facilities using these cable costs. Should companies not use some of the smallest or largest cable sizes, the input values should be populated with the cost of the smallest or largest actually used.

There are nine density zones designed in BCPM. The model sponsors were asked to make inputs available for each of the density groups. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. Placing a dollar cost (increase or decrease) that is specific to the company's different cable cost in the given density, if applicable makes density adjustments.

Note: Messenger installed cost is a separate cost input located under the STRAND inputs.

1.4.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the combined LEC engineering team subject matter experts.

1.4.4 Rationale

These inputs allow the user to input their company specific copper cable cost data by cable size and density.

1.5 26 Gauge Buried Copper

1.5.1 Definition

The type of cable used for these inputs is armored Dual Sheath "filled" to minimize cable damage due to water, dig-ups and animals. Cable sizes in this table range from 12 to 4200 pair. Values are in cost per foot.

1.5.2 Typical Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field. However, the sum of all fields populated should represent total installed cost. The Model algorithms, in the Loop.xls module, price out the various pieces of the OSP facilities using these cable costs. Should companies not use some of the smallest or largest cable sizes, the input values should be populated with the cost of the smallest or largest actually used.

There are nine density zones designed in BCPM. The model sponsors were asked to make inputs available for each of the density groups. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. Placing a dollar cost (increase or decrease) that is specific to the company's different cable cost in the given density, if applicable makes density adjustments.

1.5.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the combined LEC engineering team subject matter experts.

1.5.4 Rationale

These inputs allow the user to input their company specific copper cable cost data by cable size and density.

1.6 26 Gauge UG Copper

1.6.1 Definition

The type of cable used for these inputs is DucPic to avoid pressurization expenses. Cable sizes in this table range from 12 to 4200 pair. Values are in cost per foot.

1.6.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field. However, the sum of all fields populated should represent total installed cost. The Model algorithms, in the Loop.xls module, price out the various pieces of the OSP facilities using these cable costs. Should companies not use some of the smallest or largest cable sizes, the input values should be populated with the cost of the smallest or largest actually used.

There are nine density zones designed in BCPM. The model sponsors were asked to make inputs available for each of the density groups. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. Placing a dollar cost (increase or decrease) that is specific to the company's different cable cost in the given density, if applicable makes density adjustments.

1.6.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the combined LEC engineering team subject matter experts.

1.6.4 Rationale

These inputs allow the user to input their company specific copper cable cost data by cable size and density.

1.7 Aerial Drop Costs

1.7.1 Definition

These inputs represent the cost per foot for the Aerial Drop from the drop terminal to the NID for both material and installation.

1.7.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire Drop Cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with placing the drop can be entered in the respective fields. However, the sum of all fields populated should represent total material and installed cost.

The Model algorithms, in the Loop.xls module, price out the drops for each quadrants using lookups based on density, the number of drops per location, the percent of aerial cable fed drops, and the calculated drop length.

There are nine density zones designed in BCPM. The model sponsors were asked to make inputs available for each of the density groups. The same derived drop costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment is made by placing an incremental dollar cost (increase or decrease) that is specific to the company's differential drop cost in the given density column, if applicable.

Cost per foot of drop
0.77

1.7.3 Source

This input should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. This value supplied with BCPM is default and represents the judgment and experience of the combined LEC engineering team subject matter experts.

1.7.4 Rationale

This input allows the user to enter their company's placement cost for that portion of the OSP facilities from the drop terminal to the customer NID.

1.8 Aerial Drop Terminal Cost

1.8.1 Definition

The Aerial Terminal size ranges up to a 25 pair terminal. The housing is a 25 pair strand mounted terminal (105A-25 type) with 5 or 6 pair terminal blocks installed in ready access closures. Costs associated with NIDs are found in sections 1.13 for Business NID costs or section 1.16 for residence NID cost. The placement cost of the Aerial Drop Terminal includes the cost of the case, blocks, protection and splicing.

1.8.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire Drop Terminal Cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with placing the drop terminal can be entered in the respective fields. However, the sum of all fields populated should represent total material and installed cost. Terminals are modeled with 6, 12 or 25 pair equipped.

The Model algorithms, in the Loop.xls module, price out the drop terminals in all quadrants using lookups of the aerial terminal cost by density, the percent aerial, and the number of pairs per location for that quadrant.

There are nine density zones designed in BCPM. The model sponsors were asked to make inputs available for each of the density groups. The same derived drop costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment is made by placing an incremental dollar cost (increase or decrease) that is specific to the company's differential drop cost in the given density column, if applicable.

1.8.3 Source

This input should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. This value supplied with BCPM is default and represents the judgment and experience of the LEC engineering Team subject matter experts.

1.8.4 Rationale

These inputs allow the user to enter their company's placement cost for the aerial drop terminal.

1.9 Aerial Fiber

1.9.1 Definition

Cable sizes in this table range from 12 to 288 fibers. Values are in cost per foot.

1.9.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field. However, the sum of all fields populated should represent total installed cost. Aerial fiber cables includes cost for extruded outer duct (cables placed in flexible plastic duct before placement) for additional protection. Should companies not use some of the smallest or largest cable sizes, the input values should be populated with the cost of the smallest or largest actually used.

The Model algorithms, in the Loop.xls module, price out the various pieces of the OSP facilities using these cable costs.

There are nine density zones designed in BCPM. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment is made by placing an incremental dollar cost (increase or decrease) that is specific to the company's differential cable cost in the given density column, if applicable.

Note: Messenger installed cost is now a separate cost input located under the STRAND inputs.

1.9.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

1.9.4 Rationale

These inputs allow the user to input their company specific fiber cost data by cable size and density.

1.10 Buried Drop Costs

1.10.1 Definition

This is the cost per foot of the buried drop from the buried drop terminal to the NID.

1.10.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire drop cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with placing the drop, can be entered in the respective fields. However, the sum of all fields populated should represent total material and installed cost.

The Model algorithms, in the Loop.xls module, price out the drops in all quadrants using lookups of the buried drop cost, density, the number of drops per location, the percent of buried cable fed drops, and the calculated drop length.

There are nine density zones designed in BCPM. The same derived drop costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment is made by placing an incremental dollar cost (increase or decrease) that is specific to the company's differential drop cost in the given density column, if applicable.

Cost per foot of Drop
0.77

1.10.3 Source

This input should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. This value supplied with BCPM is default and represents the judgment and experience of the LEC engineering Team subject matter experts.

1.10.4 Rationale

This allows the user to input their company specific cost for that portion of the OSP facilities from the buried drop terminal to the customer NID is covered.

1.11 Buried Drop Terminal

1.11.1 Definition

The buried terminal size ranges from 6 to 25 pair with 5 or 6 pair terminal blocks included with pedestals. Costs associated with NIDs are found in sections 1.13 for Business NID costs or section 1.16 for residence NID cost. The placement cost of the

buried drop terminal includes the full in-place cost of the pedestal, gravel, blocks, protection and splicing.

1.11.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire buried terminal cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with placing the buried terminal can be entered in the respective fields. However, the sum of all fields populated should represent total material and installed cost. There are three sizes of terminal modeled in BCPM; 6, 12 or 25 pair.

The Model algorithms, in the Loop.xls module, price out the buried terminals in all quadrants using lookups of the buried terminal cost by size and density, pairs per location, and the percent of buried distribution for that quadrant.

There are nine density zones designed in BCPM. The same derived terminal costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment may be made by placing an incremental dollar cost (increase or decrease) that is specific to the company's differential cost in the given density column, if applicable.

1.11.3 Source

This input should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with the BCPM are national defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

1.11.4 Rationale

These inputs allow the user to input their company specific costs for the buried drop terminal.

1.12 Buried Fiber

1.12.1 Definition

Cable sizes in this table range from 12 to 288 fibers. Values are per foot.

1.12.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one of the fields such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field. However, the sum of all fields populated should represent total installed cost. Buried fiber cable cost includes extruded outer duct (cables placed in flexible plastic duct before placement) for additional protection. Should

companies not use some of the smallest or largest cable sizes, the input values should be populated with the cost of the smallest or largest actually used.

The Model algorithms, in the Loop.xls module, price out the various segments of the buried fiber OSP facilities using these cable costs.

There are nine density zones designed in BCPM. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment may be made by placing an incremental dollar cost (increase or decrease) that is specific to the company's differential cable cost in the given density column, if applicable.

1.12.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

1.12.4 Rationale

These inputs allow the user to input their company specific fiber cost data by cable size and density.

1.13 Business NID Cost

1.13.1 Definition

Different NIDs are used for business than for residence locations. One housing is included for each business unit in addition to one protector and one interface per drop pair terminated. The minimum number of terminations is equal to the minimum number of business lines per location or actual (whichever is higher).

1.13.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire business NID cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the NID may be entered in the respective fields. However, the sum of all fields populated should represent total material and installed cost. The cost includes travel and installation labor hours and is adjusted to account for installing more than one unit per trip per 8 hours workday.

The Model algorithms, in the Loop.xls module, price out the business NID in all quadrants using lookups of the business NID, protection, and interface costs by density and pairs per business location.

There are nine density zones designed in BCPM. The same derived drop costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment may be made by placing an incremental dollar cost (increase or decrease) that is specific to the company's differential NID cost in the given density column, if applicable.

Business NID cost
30.73

1.13.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

1.13.4 Rationale

These inputs allow the user to enter the company specific business NID cost data related to density and pairs per business location.

1.14 Indoor SAI

1.14.1 Definition

Indoor building terminals are placed on each multi-tenant building and are sized for the number of lines terminated at that location.

1.14.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire Indoor SAI cost may be placed in one of the fields such as the Material Cost field, or if desired, each cost associated with placing the SAI may be entered in the respective fields. However, the sum of all populated fields should represent total installed cost including protection. There are 8 sizes of SAIs modeled in BCPM – from 25 to 900 pair. SAI sizes from 1200 to 4200 pairs are multiples of the smaller SAIs in the table.

The Model algorithms, in the Loop.xls module, price out the indoor SAIs using lookups of the Indoor SAI by density, terminated cable size, and total distribution pairs required.

There are nine density zones designed in BCPM. The same derived Indoor SAI costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment may be made by placing an incremental dollar cost (increase or decrease) that is specific to the density area in the given density column, if applicable.

1.14.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

1.14.4 Rationale

These inputs allow the user to enter their company specific Indoor SAI costs based on density and pairs per business location.

1.15 Outdoor SAI

1.15.1 Definition

The SAI is the interface between copper feeder cables and copper distribution cables. They are standard cross connect boxes. Sizes with less than 200 pairs are either pedestal or pole mounted boxes. Sizes from 201 to 1800 are standard pad mounted interface cabinets. Outdoor SAI/Cross connects are used in each ultimate grid to complete the feeder/distribution interface.

1.15.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire Outdoor SAI cost may be placed in one of the fields such as the Material Cost field, or if desired, each cost associated with placing the SAI may be entered in the respective fields. However, the sum of all populated fields should represent total installed cost including right-of-way, pad, cabinet, cable stubs, splicing, and placement. There are 13 sizes of SAIs modeled in BCPM – from 25 to 3000 pair. SAI sizes of 3600 and 4200 pairs are two separate interfaces with the cost adjusted to account for multiple placements at same location.

The Model algorithms, in the Loop.xls module, price out the Outdoor SAIs using lookups of the SAI cost by density, the feeder cable size, and the backbone cables for that quadrant.

There are nine density zones designed in BCPM. The same derived Outdoor SAI costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. Adjustments are made by placing an incremental dollar cost (increase or decrease) that is specific to the density differential cost in the given density column, if applicable.

1.15.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and

represent the judgment and experience of the LEC engineering Team subject matter experts.

1.15.4 Rationale

These inputs allow the user to enter their company specific outdoor SAI costs based on density and pairs per business location.

1.16 Residence NID Cost

1.16.1 Definition

Different NIDs are used for residence than for business locations. One housing is included for each business unit in addition to one protector and one interface per drop pair terminated.

1.16.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire business NID cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the NID may be entered in the respective fields. However, the sum of all populated fields should represent total material and installed cost. The cost includes travel and installation labor hours and is adjusted to account for installing more than one unit per trip per 8 hours workday.

The Model algorithms, in the Loop.xls module, price out the residence NID in all quadrants using lookups of the residence NID housing, protection, and interface costs by density and the number of minimum pairs per resident housing unit.

There are nine density zones designed in BCPM. The same derived drop costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment may be made by placing an incremental dollar cost (increase or decrease) that is specific to the density area NID cost in the given density column, if applicable.

Residence NID Cost
30.73

1.16.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

1.16.4 Rationale

These inputs allow the user to enter their company specific residence NID costs based on density and pairs per resident housing unit

1.17 Strand

1.17.1 Definition

Aerial support strand or messenger cost must be added to the cost of any aerial cable. Cost inputs are provided for 6, 10, 16, and 26m strand.

1.17.2 Default Input Value

(Documentation under development)

Strand

1.17.3 Source

(Documentation under development)

1.17.4 Rationale

(Documentation under development)

1.18 Under Ground Fiber

1.18.1 Definition

Cable sizes in this table range from 12 to 288 fibers. Values are cost per foot.

1.18.2 Default Input Value

There are seven input fields available to the user: Material Cost, Supply Cost, Tax, Placing, Splicing, Engineering, and Adjustment. The entire cable cost may be placed in one field such as the Material Cost field, or if desired, each cost associated with the cable can be entered in its respective field. However, the sum of all populated fields should represent total installed cost.

The Model algorithms, in the Loop.xls module, price out the various segments of the UG fiber OSP facilities using these inputs.

There are nine density zones designed in BCPM. The same derived cable costs may be utilized in all densities or may be adjusted by using the ADJUSTMENT field. The adjustment made be made by placing an incremental dollar cost (increase or decrease)

specific to the density area differential cable cost in the given density column, if applicable.

1.18.2 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

1.18.3 Rationale

These inputs allow the user to enter their company specific fiber cost data by cable size and density.

2 *Structure Inputs*

Structure type and costs vary by type of facilities [Aerial, Buried or Underground], density, rock and water presence, and soil conditions [Normal, Soft Rock and Hard Rock]. Below ground placement cost for both conduit and buried cable are averaged from the forward looking LEC cost data received from data requests. LECs provided data for the cost of each different placement activity in each of the density zones and for each of the three different model soil conditions. This information was then averaged for the placement activity default cost inputs. Placement activities include such items as plowing, trenching, boring, and concrete cutting. Each of the activities relating to a surface opening (cut and restore sod, concrete, or asphalt) should include all of the subsurface work functions within the input i.e. cut and restore concrete includes the trenching below the concrete, the backfill and tamping of the subsurface, and any protection, signing, site prep, etc. associated with the site.

Every placement activity has two associated inputs – 1.) the percentage of time that the activity occurs and 2.) the percent of the total placement cost retained by the company when multiple companies share the facility.

2.1 Hard Rock Aerial Distribution Cable

2.1.1 Definition

Structure costs associated with Aerial Distribution cable for Hard Rock placement situations cover costs for Poles and Anchors and Guys. Default sharing is included for poles. Anchors and guys as not assumed to be shared since the default input value are only sufficient to support the telephone facilities placed by the model. The anchor and guy input spacing interval is divided by the average pole span input to determine the additive by pole for the anchors and guys.

The user inputs consist of a single Base Cost per Unit input field applicable for all density zones. Within each density zone there are two additional cost input fields - Cost Adjustment, and Installation Cost, and one percentage input field - Percent Assigned Telephone for [Poles and Anchors and Guys]. The base cost represents the material cost of the structure. An entry in the cost adjustment is not required, but allows the user to increase or decrease the cost by density band, if desired. Installation cost is entered in the density entry cell. The Model algorithms, in the Loop.xls module, price out the structure costs associated with the aerial cable costs as follows:
The Weighted Amount for poles is calculated, upon saving the input file, by multiplying the sum of the Base Cost Per Unit plus Cost Adjustment plus Installation Cost times the Percent Assigned Telephone for each density. The calculation for anchors and guys multiplies the sum of the Base Cost Per Unit plus Cost Adjustment plus Installation Cost times the Percent Assigned Telephone and then divides that result by the number of pole spans between guys. [Reference Section 4 for Spacing Inputs]

2.1.2 Suggested Input Values

The default pole size used in the model is a 45-foot class 5 poles, purchased and placed by the Telephony Company. The second column reflects the Base Cost Per Unit for each activity. The default cost per foot values in the model are based on national averages for that activity. The third column displays the Cost Adjustment of the activity for the specific density group and terrain difficulty, and should be represented as dollars value either as plus or minus. The fourth column displays the Installation Cost of the activity for the specific density group and terrain difficulty. The fifth column represents the Percent of activity Assigned Telephone. For example: If 50 percent is represented for poles this indicates that the telephone company shares pole costs with other companies 50 percent of the time.

2.1.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.1.4 Rationale

These inputs allow the user to input their company specific pole, anchor, and guy costs for aerial distribution cable in Hard Rock placement situations by density.

2.2 Hard Rock Aerial Feeder Cable

2.2.1 Definition

Structure costs associated with Aerial Feeder cable for Hard Rock placement situations. Unit costs are defined in the same manner as for distribution except are applicable to feeder plant.

2.2.2 Suggested Input Values

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs and percent assigned telephone may be utilized in all densities or may be adjusted by using the ADJUSTMENT field by placing an incremental dollar cost (increase or decrease) that is specific to the density area cost in the given density column, if applicable.

2.2.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.2.4 Rationale

Allows the user to input their company pole and anchors and guys structure cost data on a company-specific basis for aerial feeder cable in Hard Rock placement situations by density.

2.3 Hard Rock Buried Distribution Cable

2.3.1 Definition

Structure costs associated with Buried Distribution cable for Hard Rock placement situations. Covers eleven costs analogous with placing buried distribution cable using such activities as [Plow, Rocky Trench or Bore Cable].

2.3.2 Suggested Input Value

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.3.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.3.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for buried distribution cable in Hard Rock placement situations by density.

2.4 Hard Rock Buried Feeder Cable

2.4.1 Definition

Structure costs associated with Buried Feeder cable for Hard Rock placement situations. Covers eleven costs analogous with placing buried feeder cable using such activities as [Plow, Rocky Trench or Bore Cable].

2.4.2 Suggested Input Value

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.4.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.4.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for buried feeder cable in Hard Rock placement situations by density.

2.5 Hard Rock Distribution Conduit

2.5.1 Definition

Structure costs associated with Underground Distribution conduit for Hard Rock placement situations. Covers eight costs analogous with placing buried distribution conduit using such activities as [Trench & Backfill, Rocky Trench or Boring].

2.5.2 Suggested Input Value

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.5.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.5.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for underground distribution cable in Hard Rock placement situations by density.

2.6 Hard Rock Feeder Conduit

2.6.1 Definition

Structure costs associated with Underground Feeder conduit for Hard Rock placement situations. Covers eight costs analogous with placing buried distribution conduit using such activities as [Trench & Backfill, Rocky Trench or Boring].

2.6.2 Suggested Input Value

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.6.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.6.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for underground feeder cable in Hard Rock placement situations by density.

2.7 Normal Aerial Distribution Cable

2.7.1 Definition

Structure costs associated with Aerial Distribution cable for Normal Rock placement situations. Covers cost for Poles and Anchors and Guys only. Sharing is considered with poles, but not anchors and guys as they are placed per strand. Anchors and Guys are assumed to occur every 1000 feet so their costs are calculated on a per foot basis then added to the cost of the poles. The poles placed in the BCPM Model are 45-foot class 5 poles, purchased and placed by the Telephony Company.

2.7.2 Suggested Input Values

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.7.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.7.4 Rationale

Allows the user to input their company pole and anchors and guys structure cost data on a company-specific basis for aerial distribution cable in Normal Rock placement situations by density.

2.8 Normal Aerial Feeder Cable

2.8.1 Definition

Structure costs associated with Aerial Feeder cable for Normal Rock placement situations. Covers cost for Poles and Anchors and Guys only. Sharing is considered with poles, but not anchors and guys as they are placed per strand. Anchors and Guys are assumed to occur every 1000 feet so their costs are calculated on a per foot basis then added to the cost of the poles. The poles placed in the BCPM Model are 45-foot class 5 poles, purchased and placed by the Telephony Company.

2.8.2 Suggested Input

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.8.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.8.4 Rationale

Allows the user to input their company pole and anchors and guys structure cost data on a company-specific basis for aerial feeder cable in Normal Rock placement situations by density.

2.9 Normal Buried Distribution Cable

2.9.1 Definition

Structure costs associated with Buried Distribution cable for Normal Rock placement situations. Covers eleven costs analogous with placing buried distribution cable using such activities as [Plow, Rocky Trench or Bore Cable].

2.9.2 Suggested Input

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.9.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.9.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for buried distribution cable in Hard Rock placement situations by density.

2.10 Normal Buried Feeder Cable

2.10.1 Definition

Structure costs associated with Buried Feeder cable for Normal Rock placement situations. Covers eleven costs analogous with placing buried feeder cable using such activities as [Plow, Rocky Trench or Bore Cable].

2.10.2 Suggested Input

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.10.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.10.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for buried feeder cable in Normal Rock placement situations by density.

2.11 Normal Distribution Conduit

2.11.1 Definition

Structure costs associated with Underground Distribution conduit for Normal Rock placement situations. Covers eight costs analogous with placing buried distribution conduit using such activities as [Trench & Backfill, Rocky Trench or Boring].

2.11.2 Suggested Input

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted

by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.11.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.11.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for underground distribution cable in Normal Rock placement situations by density.

2.12 Normal Feeder Conduit

2.12.1 Definition

Structure costs associated with Underground Feeder conduit for Normal Rock placement situations. Covers eight costs analogous with placing buried distribution conduit using such activities as [Trench & Backfill, Rocky Trench or Boring].

2.12.2 Suggested Input

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.12.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.12.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for underground feeder cable in Normal Rock placement situations by density.

2.13 Soft Rock Aerial Distribution Cable

2.13.1 Definition

Structure costs associated with Aerial Distribution cable for Soft Rock placement situations. Covers cost for Poles and Anchors and Guys only. Sharing is considered with poles, but not anchors and guys as they are placed per strand. Anchors and Guys are assumed to occur every 1000 feet so their costs are calculated on a per foot basis then added to the cost of the poles. The poles placed in the BCPM Model are 45-foot class 5 poles, purchased and placed by the Telephony Company.

2.13.2 Suggested Input Values

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.13.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.13.4 Rationale

Allows the user to input their company pole and anchors and guys structure cost data on a company-specific basis for aerial distribution cable in Soft Rock placement situations by density.

2.14 Soft Rock Aerial Feeder Cable

2.14.1 Definition

Structure costs associated with Aerial Feeder cable for Soft Rock placement situations. Covers cost for Poles and Anchors and Guys only. Sharing is considered with poles, but not anchors and guys as they are placed per strand. Anchors and Guys are assumed to occur every 1000 feet so their costs are calculated on a per foot basis then added to the cost of the poles. The poles placed in the BCPM Model are 45-foot class 5 poles, purchased and placed by the Telephony Company.

2.14.2 Suggested Input Values

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.14.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.14.4 Rationale

Allows the user to input their company pole and anchors and guys structure cost data on a company-specific basis for aerial feeder cable in Soft Rock placement situations by density.

2.15 Soft Rock Buried Distribution Cable

2.15.1 Definition

Structure costs associated with Buried Distribution cable for Soft Rock placement situations. Covers eleven costs analogous with placing buried distribution cable using such activities as [Plow, Rocky Trench or Bore Cable].

2.15.2 Suggested Input Value

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.15.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.15.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for buried distribution cable in Soft Rock placement situations by density.

2.16 Soft Rock Buried Feeder Cable

2.16.1 Definition

Structure costs associated with Buried Feeder cable for Soft Rock placement situations. Covers eleven costs analogous with placing buried feeder cable using such activities as [Plow, Rocky Trench or Bore Cable].

2.16.2 Suggested Input Value

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.16.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.16.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for buried feeder cable in Soft Rock placement situations by density.

2.17 Soft Rock Distribution Conduit

2.17.1 Definition

Structure costs associated with Underground Distribution conduit for Soft Rock placement situations. Covers eight costs analogous with placing buried distribution conduit using such activities as [Trench & Backfill, Rocky Trench or Boring].

2.17.2 Suggested Input Value

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.17.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.17.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for underground distribution cable in Soft Rock placement situations by density.

2.18 Soft Rock Feeder Conduit

2.18.1 Definition

Structure costs associated with Underground Feeder conduit for Soft Rock placement situations. Covers eight costs analogous with placing buried distribution conduit using such activities as [Trench & Backfill, Rocky Trench or Boring].

2.18.2 Suggested Input Value

(Documentation under development)

There are nine density zones designed in BCPM. The same derived costs, percent activity and percent assigned telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

2.18.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

2.18.4 Rationale

Allows the user to input their company structure cost data on a company-specific basis for underground feeder cable in Soft Rock placement situations by density.

3. *Manhole Inputs*

Sizing of conduit and manholes are based on the required amount of facilities required for telephony. No additional duct capacity has been added for sharing. For example, if a placement of three copper cables is required then three ducts are placed for the cables and one duct is placed for maintenance. This example would place a pre-cast manhole (PTS-

65) with four ducts. Manhole costs and duct cost per foot is averages from data provided by a number of LECs.

3.1 Hard Rock Manholes

3.1.1 Definition

These input reflect costs associated with manholes that are placed in hard surface rock. Unit sizes include hand holes with maximum capacity of two ducts, 4'x6' manholes with a capacity of four ducts, a 12'x6'x7', and an Adder size of 12'x6'x7', each of which can connect to nine ducts. An Adder refers to additional midsections that are required when duct requirements exceed the standard 9-duct manhole size of 12x6x7. The conduit per duct foot input is material cost only and does not include any trenching.

3.1.2 Suggested Input Value

There are two COST input fields for Per Unit Cost available to the user: Material and Installation, which applies to all nine density zones. Within each density zone there are two additional input fields, Cost Adjustment and Percent Assigned Telephone for each unit such as a handhole or nine-duct manhole. The Material cost represents the material, supply cost, tax, and engineering. The Installation covers all costs associated with placing the manhole and includes restoring the ground to pre-digging conditions. The Cost Adjustment is not mandatory, but allows the user to increase or decrease the cost by density, if desired. The Unit Cost, for the Handhole, Manhole, Manhole and Adder is calculated upon saving the input file and uses the Material plus Installation plus Cost Adjustment time Percent Assigned Telephone for each density. Similarly, the Conduit Per Duct Foot is calculated using Material time Percent Assigned Telephone for each density.

The first column shows the Unit. The second column reflects the Material Per Unit Costs. The third column displays the Installation Per Unit Costs. For the subsequent columns, in each density, the first column reflects the Cost Adjustment of the activity for the specific density group and terrain difficulty. The second column represents the Percent Assigned Telephone. For example: If 75 percent is input for a shared handhole, this indicates that the telephone company shares this activity with other companies 25 percent of the time when placing underground cable. Note: Handholes are not large enough to include both telephone and other facilities.

There are nine density zones designed in BCPM. The same derived costs, and Percent Assigned Telephone maybe utilized in all densities or maybe adjusted by using the COST ADJUSTMENT field by placing a dollar cost (increase or decrease) that is specific to the company's different cost in the given density, if applicable.

3.1.3 Source

These inputs should be obtained from Outside Plant planning or engineering experts for the company under study, if possible. The values supplied with BCPM are defaults and represent the judgment and experience of the LEC engineering Team subject matter experts.

3.1.4 Rationale

Allows the user to input their company manhole cost data on a company-specific basis for underground cable in Hard Rock placement situations by density.

3.2 Normal Rock Manholes

3.2.1 Definition

These inputs represent costs associated with manholes placed in normal soil conditions. Unit sizes include hand holes with maximum capacity of two ducts, 4'x 6' manholes with a capacity of four ducts, a 12'x6'x7', and an Adder size of 12'x6'x7', each of which can connect to nine ducts. An Adder refers to additional midsections that are required when duct requirements exceed the standard nine duct manhole size of 12x6x7. The conduit per duct foot input is material cost only and does not include any trenching.

3.2.2 Default Input Value

There are two COST input fields for Per Unit Cost available to the user: Material and Installation, which applies to all nine density zones. Within each density zone there are two additional input fields, Cost Adjustment and Percent Assigned Telephone for each unit such as a four duct manhole. The Material cost represents the material, supply cost, tax, and engineering. The Installation covers all costs associated with placing the manhole and includes restoring the ground to pre-digging conditions. The Cost Adjustment is not mandatory, but allows the user to increase or decrease the cost by density, if desired. The Unit Cost, for the Handhole, Manhole, and Adder is calculated upon saving the input file and uses the Material plus Installation plus Cost Adjustment times the Percent Assigned Telephone for each density. Similarly, the Conduit Per Duct Foot is calculated using Material times the Percent Assigned Telephone for each density.

The first column shows the Unit. The second column reflects the Material Per Unit Costs. The third column displays the Installation Per Unit Costs. For the subsequent columns, in each density, the first column reflects the Cost Adjustment of the activity for the specific density group and terrain difficulty. The second column represents the Percent Assigned Telephone. For example: If 75 percent is input for sharing a handhole, this indicates that the telephone company shares this handhole with other companies 25 percent of the time.

There are nine density zones designed in BCPM. The same derived costs, and Percent Assigned Telephone maybe utilized in all densities or maybe adjusted by using the COST